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## Contributed Articles.

*On Important Apian Subjects.*

### Foul Brood Spread by Bees Robbing Foul-Broody Colonies.

BY WM. M'EVROY.

On page 100 Mr. Graden takes the ground that "when a colony infected with foul brood is robbed the infection is not carried in the honey."

It is over 19 years since I discovered that foul brood was spread by robber bees, and that they carry the disease in proportion to the amount of diseased honey that they convey to their own hives. I know one bee-keeper that lost 120 colonies through his bees robbing some foul-broody colonies that his neighbors brought into his locality. I know another bee-keeper who lost a very large apiary through his bees robbing out a few foul-broody colonies that one of his neighbors brought near his bee-yard. I could give many such cases and prove beyond every shadow of doubt, by many men in Ontario, that they got foul brood into their apiaries through their bees robbing foul-broody colonies kept by their neighbors.

Before 1890, foul brood was spreading through the Province of Ontario at an alarming rate, and to make matters a thousand times worse, we had men selling many foul-broody colonies and shipping them to many parts of Ontario. Then as soon as these foul-broody colonies were robbed by the bees from the surrounding apiaries, the disease began breaking out in them.

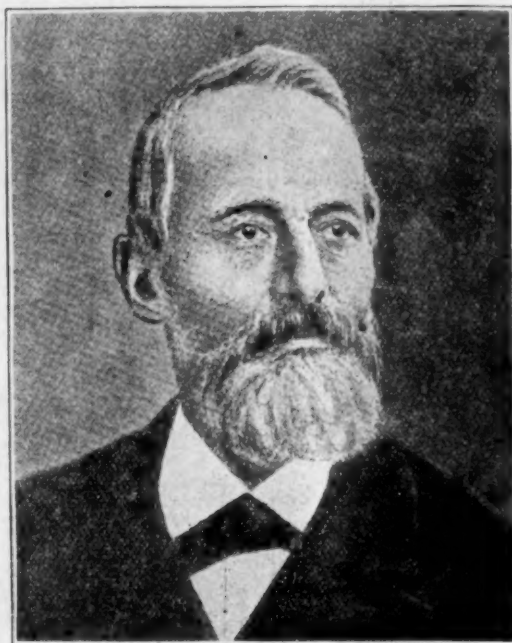
In September, 1889, Mr. Gemmill wrote to me that it would only be a question of time when all the best bee-keepers of our country would be driven out of the business, if we didn't get an Act passed to stop the selling of diseased colonies of bees, and to prevent careless neighbors from keeping foul-broody colonies, which were fast spreading the disease to the fine apiaries by the bees robbing the diseased colonies. He also said that he was going to bring this matter before the Ontario bee-keepers' convention, in Belleville, and push it until he got an Act passed to stamp out foul brood.

When the bee-keepers met in Belleville, in January, 1890, Mr. Gemmill urged the convention to act promptly in this matter. It was then moved by Mr. McKnight, seconded by Mr. Darling, and carried, that Mr. Pringle and Mr. Gemmill be a committee to wait on the Minister of Agriculture, and get an Act passed for the suppression of foul brood.

The Act was passed on April 7, 1890, and I was appointed Inspector soon after. I knew from the many private letters that I had received for years from different parts of the Province, that there was a great deal of foul brood in Ontario. But when I went to work to examine the apiaries in many counties, I became astonished at finding so very many bee-yards in a horrible state with foul brood. I set to work at once to straighten things up in the most peaceful way.

With the help of Mr. Pringle, Mr. Gemmill and Mr. Picket (the last three Presidents that I served under), we got the foul-broody apiaries cured by wholesale. I warned the bee-keepers everywhere to do all the handling of the diseased combs and curing of their foul-broody colonies in the evenings, so as not to have any robbing done, and to give the bees a chance to settle down nicely before morning. In some apiaries many of the diseased colonies could be cured by remov-

ing their combs in the evening when the bees are gathering honey and then left to build their own. But where an apiary is badly diseased, and the bees have a quantity of unsealed honey stored in the brood-nest in diseased cells, they cannot be cured in the time of a honey-flow by putting the bees into empty hives to build their own combs. Because when the combs would be removing, the bees would rush right into the unsealed honey in the stain-marked cells (diseased cells) so readily gotten at without any uncapping, and then fairly gorge themselves with the very worst of diseased honey. Then, as soon as the bees had a little comb made, they would



Dr. Adolphus de Planta—See page 333.

store part of the diseased honey in it, and then the disease would break out again.

Where foul-broody colonies are very badly diseased, and weak in bees, the bees will, in the time of a honey-flow, store a quantity of honey in the brood-nest, and a good deal of it right in the cells where the foul-broody matter had dried down and left its stain-mark on the lower side and bottom of the cells. I have found hundreds of colonies in that condition, and I had to see that every colony in all diseased apiaries was perfectly cured or burn them.

I also knew that nothing but a thorough cleansing process would be of any use in curing all the foul-broody apiaries that I would meet with on my rounds through the Province. I told the bee-keepers everywhere to go to work in the honey season and remove the foul combs in the evenings, and put in frames with comb foundation starters; and at the end of four

days the bees would have drawn out the starters and stored most of the diseased honey taken with them from the old combs; and to remove the starters the fourth evening, and give full sheets of comb foundation. By the time the full sheets of foundation were drawn out, the diseased honey would be used up, and then a perfect cure would be made in every case so treated. Then by making wax out of the new combs that were made out of the starters during the four days, and the old foul combs, every thing would be all right with every colony in nice, new combs made out of foundation.

I sent some foul-broody combs with honey in, to Dr. Howard, of Fort Worth, Tex. He uncapped the sealed honey, and carefully dipped the honey out of the cells without disturbing the cell-walls, and then with a microscope he examined the honey and found the living germs of foul brood in it. Will any man in the world say that if a colony of bees were to rob the combs of the honey that Dr. Howard examined, and then feed it to their larvæ, that it would not give them foul brood at once?

Woodburn, Ont., Canada.



### What Dr. Miller Thinks.

**LARGE HIVES.**—After several years of experiencing the pleasure of handling 8-frame hives, it would seem a hard matter to go back to the 10-frame hives of previous years. So it gives me a pang of discomfort to read on page 293 a word from Chas. Dadant, "We do not, and in fact cannot, depend upon natural swarming when running for extracted honey with large hives." For bad as unwieldy hives are, swarming is still worse.

**TIME OF EXTRACTING.**—Dadant says: "When the honey-yield is over." E. France thinks that will not do for some who would have their crop of white honey spoiled by inferior honey before and just after the white harvest.

**AIR FOR WINTER.**—I think Dr. Gallup has struck a good point on page 294, where he thinks bees have wintered badly because the hives were too close. I was once surprised to find a man who was very successful in wintering bees in box-hives, and he had each hive on four blocks, so that all winter long there was a space of half an inch under all four sides of his hives.

**TAKING OFF HONEY.**—Bro. Abbott says, on page 294: "After the honey is in the supers and capped over, the longer it can be left on the hive the better it will be." I think that's true, if you are after some good honey for your own table without regard to looks. But if you want honey that will bring the most money on the market, then the rule is, "The longer you leave honey on the hive after it is sealed over, the worse it will be."

**TALKING BACK.**—I think the "Old Reliable" for May 9 has enough "talking back" in it to suit even F. L. Thompson. I must confess it makes interesting reading, but I give F. L. notice he better not talk back to me!

**TAKING OFF SECTIONS.**—Bro. Abbott says, on page 294, that sections are sure to have little holes bitten in the cappings when taken any other way than by the use of bee-escapes. Not in this locality. I've taken off thousands of sections without holes in the cappings long before escapes were known. In some cases escapes are good things, but I don't always use them, by any means.

**UNQUEENING COLONIES.**—Out of respect for the originator of the word, Father Langstroth, I prefer "unqueening" to "dequeening." But whether it be dequeening or unqueening, I want to say to F. L. Thompson regarding his paragraph on that topic on page 296, that if he often takes a notion to lay aside his usual clear way of putting things to mix up his words so darkly as he has in that paragraph, he may expect to see a number arise and do some vigorous "talking back." Or is it that I'm a little slow to spell out his meaning?

**FLAT HIVE-COVERS.**—Edwin Bevins has a good cover with that single board and its two heavy cleats, only when a board takes a notion to twist—I mean twist, not warp—then a cleat of cast-iron won't stop its making a bad fit.

**WORKING LONG HOURS.**—I see trouble brewing between B. Taylor and Rev. E. T. Abbott, on page 301. The form of the first named gentleman certainly doesn't show that his

habits lay much fat upon his bones, and I'm with Bro. Abbott in trying to take things as easy as I can. Nevertheless, the man who isn't willing when the busy time arrives to get up at an unseemly season and work over hours, better quit bee-keeping before he ever begins.

**TIN SEPARATORS.**—On page 306, H. V. believes that a coating of beeswax will prevent travel-stain of sections. It would be interesting if H. V. would tell us the reason of this, and whether his belief has been established by long observation. Marengo, Ill.



### Automatic Swarming—Queries and Comments.

BY G. M. DOOLITTLE.

A correspondent sent me two or three questions to answer, and they proved to be of so much interest to me that I have concluded to give them to the readers of the American Bee Journal, together with some comments thereon.

1st. "It is well known that when a hive is full of bees, so that they begin to think of 'laying out,' they will crowd into an empty space which may be about the hive, much sooner than they will go on the outside of the hive. Taking advantage of this fact, suppose that as soon as the sections are filled with bees, they being well at work, and before the swarming-fever comes upon them, we bore a two or three inch hole in one side of the hive, and on the inside of the same put a piece of queen-excluding metal. Next we will bore a corresponding hole of the same size in an empty hive, cover the same with queen-excluding metal, and set this empty hive right up against the other having the bees in it, so that the holes match, and then put a queen-cell in this empty hive. Now the point I wish to know is, will there not in time be a new swarm of bees in that empty hive?"

That this will work just as outlined above I have my doubts, but I think there may be something in it with some modifications which may be of benefit to the bee-fraternity. From past experience I judge that, did the bees go into the empty hive and care for the cell until it hatched, the queen on going out to meet the drone, would, on her return, enter the wrong hive and be killed, thus spoiling our work. But what is there to hinder placing a comb of honey and one of brood in the empty hive, and then giving the queen-cell? I would now warrant the bees from the old hive to go through the queen-excluding metal, take care of the brood and cell, and care for the queen just the same as if she were in an isolated hive or nucleus, when in due time she will become fertile and go to filling the combs with eggs. From all of my experience in the past, in rearing queens as given in my book, in having them reared above queen-excluding metal by the thousand, while the old queen was doing her duty below, I am just as sure that this plan would work as if I had tried it and proved the same.

2nd. "By using the plan which I have outlined above, will it not prevent the original colony from swarming? If so, this will do away with some one to stay at home all the while to watch for swarms during the swarming season, besides proving a bonanza to those having out-apiaries which they wish to work for comb honey?"

Well, as I said before, I do not think it would work as the questioner gives it, but by using the suggestions given as I have explained, I see no reason why it should not stop swarming entirely. As soon as the young queen gets to laying, or before the old colony is a very strong one, take more combs of brood from it and put in their places frames of foundation or frames of worker-comb, so they will have no chance to build drone-comb, putting the brood thus taken out over into the hive having the young queen. Sections should now be placed over the part of the new hive where the brood and combs are, so that in no case the bees lack for room to store all the honey there is coming in; and I would have these sections in every case filled with foundation, so that the bees would have no excuse for any desire to swarm by being loth to build comb. Occasionally, or as often as the out-apiary is visited, move more frames of brood over to the new hive, putting frames filled with foundation in the place of the frames taken out each time until the new hive is full, always putting on sections as the bees seem to require. If I am correct in thinking the above will do away with swarming, we shall have something of great advantage, at least to all those working out-apiaries.

3rd. "Will a colony thus managed store as much honey as they would had they been kept in the old hive, and by some means not allowed to swarm?"

If we had that "some means" which would allow the bees to work with a will all summer long, with no desire to swarm,



then I should say that they would produce more honey in the original hive, and with only one queen; but inasmuch as bees are, as a rule, determined to swarm where worked for comb honey, it looks to me as if the above would give more honey than could be obtained either by letting them swarm, or so throwing them out of their normal condition by manipulation so that swarming can be prevented.

All cutting of queen-cells, caging of queens, etc., to prevent swarming seem to put the colony in an abnormal condition, so that the work that they do while so placed seems to be done with a protest; hence it often happens that the season is mostly consumed by the bees sulking the time away, instead of their working with a will. Such a state of affairs always results in a small crop of honey, and, as a rule, that which we do get is of poor quality. If there is a short-cut route to prevent swarming, and at the same time secure a good yield of a good quality of honey, which can be used at any out-apiary, it will be a great boon to all those wishing to keep bees more than what the home-yard will accommodate.

Borodino, N. Y.



### Facts About Bees and Strawberries.

BY REV. M. MAHIN, D. D.

I have noticed in the American Bee Journal some discussion between Rev. Emerson T. Abbott and Hon. Eugene Secor on the subject of "Bees and Strawberries," and as we all want "facts" I will give some of the results of my observation on the subject.

1. It is a fact that bees perform a very important part in the pollination of the pistils of many plants. Without honey and pollen gathering insects of some kind we would have no melons, cucumbers, pumpkins or squashes. And doubtless the seeding and fruiting of all flowers visited by the bees are materially helped by them. No well-informed person will call these facts in question.

2. It is a fact that in this region of country honey-bees very rarely touch strawberry blossoms. I have had a strawberry plantation in close proximity to my bee-hives, and have made frequent and careful observations, and to the best of my recollection I never saw three bees at a time among the strawberry plants, though the bloom was abundant. It may be that on a different soil, and in different climatic conditions, bees may work on strawberry blossoms, but they do not do it in this part of the country. There are, however, other insects that do visit the strawberry blossoms, and do for them what our bees do for many other flowers. But *Apis mellifica* is of no practical advantage to the strawberry grower. This is a fact, and facts ought to be recognized.

3. It is a fact that strawberry growers do not plant varieties that are exclusively staminate. They would be very foolish to do so. From my boyhood I have been familiar with the fact that there are wild strawberry plants that never bear any fruit, but I have never known them to be cultivated.

Bro. Abbott says: "The rows of vines producing stamens only bear no fruit, of course, and are of no value only as fertilizers." Why should ground be given to rows of plants which produce no fruit, when such varieties as Gaudy, Jessie, Captain Jack, Parker Earl, Wilson, and many others, furnish abundant pollen, and produce very fine crops of berries besides? Bro. Abbott is certainly mistaken in supposing that any exclusively staminate strawberry plants are cultivated. It may not be scientifically correct to designate as staminate those varieties that have both stamens and pistils, but it is done in all fruit catalogues, and by all writers on fruit-culture.

New Castle, Ind.



### Bee-Keeping in the Bermuda Island.

BY W. K. MORRISON.

Myself and bees landed here on Feb. 22, and despite their many hardships were all alive, and soon got down to business. All have heard of these lovely Isles, but definite knowledge is rare. The area of the group is 20 square miles, and about 22 long—hardly enough room for one enterprising bee-master; but just think how nice for queen-rearing—no foul brood, no dysentery, and no lizards. The highest temperature in summer is 86°.

The chief crops are lilies, onions and potatoes, but bananas, melons, squashes and pawpaws are grown for home consumption; in fact, almost anything seems to grow. Among trees the cedar is monarch of all, and is idolized by the natives for lack of a better. Strange as it may seem, the finest land is uncultivated, being marsh land, easy of drainage. Here is

a chance for those smart Canadians we have been told of lately, for British born subjects only can own land. Strawberries do well, and fetch prices that only editors and millionaires are willing to pay!

Mr. Root might come and see the finest roads in all the world, over 100 miles of them, smooth as asphalt, and laid amidst enchanting scenery.

Next to Gibraltar, this is the most important military post in the world, and literally bristles with guns and other implements of war. But Bermuda has higher claims for distinction, for it has no beggars and no paupers, and it is studded with churches and schools so numerous that I am puzzled to know where they get the money to sustain them. The people speak excellent English, and the ladies have a speech that is certainly charming to the ear, and fills the hearts of their American sisters with despair. It need hardly be said that the trade relations are chiefly with Uncle Sam, the colony having a tariff of 5 per cent. for revenue purposes only.

Altogether, I am happily situated in almost every way. The air is remarkably clear, and also soft, and strolling along these superb roads in the clear moonlight, mere existence is a delight, and one gets a foretaste of that "Beautiful Valley of Eden." But it is not always thus, for terrific winds sweep over the Islands, and Old Atlantic is lashed into a high fury.

It would take some space to elaborate the lily business, and needs a page by itself, but if any of the fraternity of bee-men desire a few bulbs for gardening I will buy what they want, or would be glad if friends would send me seeds of honey-plants for an exchange. They are growing here that lovely plant—the "Freesia"—and the bees love it as much as men do, for its fragrance, borne on the breezes, is never to be forgotten; but a native oxalis they simply get wild over, which I may describe at a future time.

Now about my last article, on page 36, I have a word to say. Mr. Miles (page 132) seems to think that that dovetail will be hard to make. It's not so. Mine were made by hand, and are all right. If they are made as accurately as my flat hive roofs, they'll do. The "key" should be made of hardwood, and have a shaving taken off its broadsides so as to not drive the pieces apart. The hive should be put together in a box form, and all joints glued, then you will have a hive to be proud of, and last a life time.

I have recently seen a remarkably useful book on extra-tropical plants suitable for culture, and as it designates the honey-producing ones, it should be in the possession of every bee-keeper. It gives a succinct account of a vast number of plants suitable for culture outside the tropics, and is published by the Victorian Government. It may be procured from John Ferris, Government Printer, Melbourne, Australia. Its probable cost may be about \$2.

Devonshire, Bermuda Isles, April 2.



### Planting to Help Out Bee-Pasturage.

BY W. H. MORSE.

Planting for honey seems to be unsatisfactory to the many that have tried it, and quite a number claim a total failure, but no one will dare deny that we can improve our locality. The majority of the writers in the Bee-Keepers' Review seem to think things are all going to be paralyzed in the future in the producing of honey. Well, we are getting the basswood and other timber cut by the wholesale, but if the forests are cleared it cuts that supply off, but another springs up to take its place, and what is to hinder planting to get results (answer), for the other fellow's bees to gather the nectar? Well, think that way, and you are sure to claim bee-keeping doesn't pay finally, but, say, if you plant a tree, see to it that it is a honey-producing variety; and if clover, don't scatter sweet clover in a neighborhood which is kept in good order, but be judicious in your selection. Go into a deserted part, if there is one, and give the sweet clover a chance to run the weeds out, not forgetting to add a little catnip—it is a fine plant for waste-places, it is as tenacious as sweet clover, and when once sowed it will take care of itself. But if the neighborhood has no place for such plants, give it a liberal dose of white clover seed, but don't go to the pasture to sow it, as the grass will in most cases run it out, but utilize the sides of the roads, or any bare and exposed position.

I will mention an incident in regard to white clover which I noticed in particular the last two summers. Not more than 100 yards from my bees there is a steep rise in the land, and no shade in any direction, and this land was covered with white clover. About the same distance in another direction the land has some trees growing on it, and being lower, it is

considerably more moist than the higher land; and it, too, is covered with white clover, but I failed to find any bees working on it, while the clover in the exposed position was covered with bees.

Now, if you are going to sow any of these seeds, pick your time for it. As soon as the frost is all out of the ground, and we get a storm of rain, lose no time in sowing, as the seed will then get a chance to be covered with soil. But remember, chickens are fond of clover seed.

If you are going to plant any basswood trees, be careful not to get them sun-scaled on their trunks, for if they are, the borers will find them and frustrate your attempts to get fine trees. To keep them from sun-scalding, wrap them with old gunny-sacks cut in strips four or six inches wide, or shade the trunks anyway you can for the first few months after planting. I am alluding to the Western States where the sun gets such force previous to the trees getting a healthy start. Above all, don't be too kind to your trees. If the soil is poor, don't mix any better soil with it and expect the trees to do well by it, as it is positively injurious to them. Dig and plant in the same soil that you threw out, treading in firmly, and leave the surface concave around the trees to give them more chance to catch the rains.

Now I want to tell you not to be discouraged with these things. I have practiced horticulture for 21 years—all its branches—and during that time I have planted thousands of trees in England, and in this great and glorious State of Nebraska I have spent nine years, and still planting. Say, don't believe we are all dying for want here. Last year was the first year that I have seen a failure, and last year the farmers got half a crop; but as to the sandhills part of the State, I have nothing to say, only that I don't want any of that part of the State. But in the fertile part trees do well after they get established, and make a rapid growth. We are classed as a treeless State, so if any of you fear to plant trees, I say take courage and try. Don't believe you cannot profitably improve your bee-pasture, but study how, and I am convinced success will attend your efforts.

But let me give a word of caution. If you buy trees or seeds, buy them direct from the firms that have a reputation to keep up. Of course, around our homes we can plant fruit-trees and get the double benefit, and if you care to have a few shrubs to beautify home grounds, use "barberry vulgaris," and give it plenty of water; and if you have a sunny corner where everything will dry out and die, plant "lycium," and let it have its own way. I know of no shrub or plant that can come anywhere near this for flowering. I have some plants of it, and my bees put in from May 18 until the end of August working on it. But there is no end of material to plant, and if we plant trees and permanent plants we are conferring a benefit on mankind as well as ourselves.

Florence, Nebr.



### Rapid Increase and Early Honey in California.

BY DR. E. GALLUP.

Now if any of you Eastern people are congratulating yourselves that California is going to produce but very little surplus honey this season on account of the loss of bees, etc., don't flatter yourselves on that head. You may be mistaken.

I was talking with Mr. Oderlin, who resides here in Santa Ana, and runs a bee-ranch up in the foothills. He says his bees commenced swarming March 20, and have kept it right up to date (April 27). He commenced extracting April 2, has taken out one ton, and the hives are full again for the third extracting. If nothing prevents, he will have a ton of honey in Milwaukee, Wis., by May 12. How many are going to beat that, either North or South?

California vegetation and flora are immense. The foothills and mountains are covered with a vast variety of wild or natural flowers, which would astonish any person not acquainted with this climate and its capabilities. It must be seen to be appreciated, or even comprehended. Bees were never in better condition so early in the season than they are now. This is the universal conclusion so far as heard from. One bee-keeper tells me that he not only has his original number of colonies, but is away ahead, and all are in the very best possible condition; and that, too, after a loss of about one-half the past year.

If you will read Mr. Doolittle's article, on page 246, you will see that it is just fun, as I said in a previous article, to build up and make increase when one has the ready-made combs, in this climate.

Mr. Oderlin's increase, this year, was all from natural swarming, and he has put the greater proportion of the swarms back, as he did not want so much increase. Recollect

that the season is earlier in the foothills, or low down, than it is higher up in the mountains. But the season lasts, or continues, later in the higher altitudes. Now recollect another phase of California bee-keeping, that is, that the plow or stock can never interfere with the mountain apiary, as many of the ranges are inaccessible to both.

When one can select a location with foothills on one side and high mountains on the other, the bees take advantage of both the early and late pasturage or honey-flow.

There, I believe that I have answered inquiries by different ones, in the above article.

Santa Ana, Orange Co., Calif.



### The Length of Life of the Bees.

BY H. P. WILLSON.

Mr. Thomas G. Newman says, in his book entitled "Bees and Honey," that "the natural life of the worker honey-bee does not exceed six months." This seems to be the opinion of many bee-men—in fact, of all, so far as I can read, but it seems to me to be contrary to facts. Take our own bees, for instance. On Sept. 16, 1894, there was a frost that killed all the bee-forage in this part of the country. The bees gathered no more honey, and of course the queen would soon stop laying eggs. There were certainly no eggs laid after the first of October. If so, then the last young bees of the season would be out about Oct. 21; but we will suppose the last hatching would become full-grown bees by the first day of November. (I am confident from examining the hives that no brood was hatched later than the first of October, if so late.)

The bees were put into the cellar Nov. 19, 1894, after a good deal of cold weather, and were taken out of the cellar April 6 and 7, 1895. At that time, and for several days after, there was no brood in the combs, that I could find on examination. The cellar was cold, and of course the queen would not lay while the bees were huddled together to keep warm. Suppose the queen commenced laying as soon as the hives were taken out of the cellar, give her three days to lay the first lot, and it would then be April 10; and 21 days would extend to May 1; but these bees would not go out to work for 16 days later.

If the life of bees does not exceed six months, the old bees would all be dead by the first of May, and not a bee left to work outside the hive. Such will not be the case, however. There will be plenty of bees at work, and bees, too, that were out last fall. I have no doubt that many of the bees now in the hives were matured last August.

Bathgate, N. Dak., April 24.

## Questions AND Answers.

CONDUCTED BY

DR. C. C. MILLER, MARENGO, ILL.

[Questions may be mailed to the Bee Journal, or to Dr. Miller direct.]

### Using Hives Wherein Bees Have Died.

Yes, Doctor, I ought to have been scolded a little bit for my negligence, but you answered in the right paper. (See page 282.) Your answers are satisfactory, but I want a little more information:

1. Will swarms accept the hives where bees have died in them?

2. If not, what can I do to make the bees accept them? I also want to utilize my hives.

C. L. C.

Glen Rock, Nebr.

ANSWERS.—1. Yes, I think you will find no difficulty. 2. If there is any trouble at all, it will be because the old hives are dirty, particularly where colonies have died in them which were badly affected with diarrhea. The remedy is obvious. Clean them. Scrape off the dirt, or wash and scald off.

### Was It the Best Under the Circumstances?

I got up early this morning and went out to look at the bees. It was just as I expected with these little 8-frame hives. The bees in some hives had become so numerous that some of them had to sleep out-doors. I found many bees clustered on the alighting-place. I went to work and re-



moved the outside packing and at noon removed the cushion and burlap. Every space between the frames seemed to be solidly full of bees, and they had started to build comb between the burlap and the frames where the Hill's device had left a little open space. Fruit-bloom was never more abundant than it has been here for several days, and the weather has been everything that could be desired.

Not knowing what else to do, I put on the surplus cases having many sections with drawn or partly-drawn comb. I feared that if the bloom should continue abundant for a few days more the bees might get the swarming-fever, and I do not want any swarms now. If the bloom continues, and the weather does not turn wet and cold, I may get some honey in the sections. If not, I think the bees will be better for having more room. Have I done the best thing that could be done under the circumstances? The unexpected is always happening in apiculture. E. B.

Leon, Iowa, May 2.

ANSWER.—What you have done was a good deal better than to leave the bees as they were, and since you have done it I think I will say it was good, but even for the sake of being good-natured I can hardly say it was the best thing. Those sections are not likely to be filled and finished up in good shape during fruit-bloom, and when they are finally finished they will not be so fresh and nice as if they had been put on later. They however served a good purpose by allowing the bees to have a place to store some surplus instead of crowding the queen with it, but the question arises whether you might not have done still better by giving the queen additional room, or in other words, might it not have been better to have enlarged the brood-nest instead of the surplus room? Did the queen have all the room she could use in those eight frames? Why not put another story under, and let the brood-nest extend down into it, even if you should afterward take away the extra story?

#### Granulated Honey in Combs—Introducing, Etc.

1. In looking over my bees this spring I noticed that some syrup made out of granulated sugar, which I fed to them last fall, had granulated in the cells. Will the bees clean out the cells, or will I have to give them clean combs?
2. I also noticed that there were some dead bees in some of the cells—they were old bees, and seem to have gone into the cells to get the honey and died there. Please give the cause of their dying in the cells.
3. What is the best way to keep combs partly filled with honey (off of the hive) away from the bee-moth?
4. What is the best way of getting moths out of the combs if they get into them?
5. When is the best time to introduce a queen?

J. R. S.

- ANSWERS.—1. The bees will throw out the grains of sugar.
2. I suppose they went into the cells to keep warm rather than to find honey there. They were probably old, and that was as comfortable a place as any in which to die.
3. In previous numbers you will find answers to this question and the next. There is no better place to keep combs so the moth will not trouble them than under a strong colony of bees, letting the bees have open communication with them from above.
4. If there are any big ones, pick them out with a wire nail; little ones you can brimstone. But if you put them under a strong colony the bees will take care of both big and little.
5. That depends somewhat upon circumstances. As a general rule, there will be least trouble and loss during the honey harvest.

#### A French Naturalist and "He" Bees.

The enclosed on "Bees and their Honey," was clipped from the New Haven (Conn.) Register. Please give the readers of the American Bee Journal your opinion of such "scientists" or "naturalists." G. H. Y.

Wallingford, Conn.

The item referred to by Mr. . reads as follows:

"BEES AND THEIR HONEY.—A French naturalist with a mathematical turn of mind has been calculating the work done by a hive of bees. When the weather is favorable, a 'worker,' according to his estimate, makes usually six to ten trips, visiting 40 to 80 flowers and collecting about one grain of nectar. Even when under extraordinary good conditions

he visits 200 or 400 flowers, the amount collected would not exceed five or six grains, and the collection of a pound would occupy several years. A hive contains 20,000 to 50,000 bees, of which only half are occupied in preparing honey, the rest caring for the young and their quarters. In a good day 16,000 to 20,000 bees can, in six to ten trips, visit 300,000 to 1,000,000 flowers. For this it would be necessary that the locality should be favorable for honey-making, and that the nectar-secreting plants should grow near the hive. A hive of 30,000 bees can then, under good conditions, make about two pounds of honey a year."

I would hardly advise any one to try to straighten out this clipping and reconcile its statements unless he has some desire to be a gibbering maniac. It may be a little new to bee-keepers to learn that "under extraordinary good conditions" bees may visit five times as many flowers as usual. That is, if a large amount of nectar is yielded by each flower, then the bees can visit a big lot of such flowers, and the more they get from each flower the more visits they make. I suppose they get discouraged when the yield is small. "When everything is favorable a hive can gather two pounds of honey in a year, and this may seem rather large when it is noticed that it is the he-workers that are mentioned, as "he visits 200 or 400 flowers."

#### Cut-Off Board and Bee-Escape.

Who is the author of the "cut-off board" and the present principle of operating bee-escapes? E. J. C.

ANSWER.—J. S. Reese, Winchester, Ky., I think is entitled to the honor of starting the whole escape business. He used the wire-cloth cone-escape, but he seems to be large-hearted enough to be glad of any improvements that are made. What do you mean by "cut-off board?" Probably the board that is used with the escape. If so, that belongs to Reese.

#### Doubtless a Case of Laying Worker.

I have one colony of bees in which, when examined this spring, I could find no queen or any brood. I waited a week or ten days and looked again, and found no sign of a queen, but plenty of stores. By this time my weakest colonies had plenty of brood, so I thought it must be queenless, and gave them a comb of brood in all stages. I then waited on them 13 or 14 days and looked again, and to my surprise they had brood in two other frames besides the one I gave them. Now they had three queen-cells, one of which was capped nicely—there was a batch of drone-brood near by the queen-cells; these queen-cells and drone-comb were not on the comb of brood I gave them (I am sure), mind you, so I concluded they must have a queen already. I took out the queen-cells and waited about a week and looked again, and found another queen-cell capped. This colony seemed to have plenty of bees, but did not seem to be working like the others. Were they preparing to swarm, or to supersede the old queen? or what is the matter with them? D. B.

Grand Prairie, Tex.

ANSWER.—By the time this reaches you I think you will find this colony has more than its share of drones, and all of the sealed brood will be not flat but round, like little marbles. That means laying workers, and I don't believe you can do anything better than to break it up at once, giving the combs to other colonies, with bees adhering. Don't mourn if some of the workers are killed. They are old and not worth much.

#### How to Distinguish Honey-Dew.

Last year the surplus honey was a perfect failure, but the bees went into winter quarters with plenty of stores, but at this date (April 13) full 75 per cent. are dead, with plenty of honey in the frames. The hives are badly spotted. The article on page 231, by C. Davenport, suggests to me the probability that honey-dew may be the cause of the disaster. I would like to be informed by what unerring feature this honey-dew may be distinguished from good honey; and would it be advisable to extract all uncapped honey at the beginning of winter, and supply the deficiency with granulated sugar? Would the capped honey be broken while extracting the soft or uncapped part? H. F. R.

Wadsworth, Ohio,

ANSWER.—I doubt if I can put in words a description of

honey-dew so that a person who had never seen it before could be sure of it. I don't believe I could give such a description of clover and linden honey as to allow a novice to distinguish them. Honey-dew is generally dark in color—I have seen it darker than buckwheat, but not so clear—and it has a disagreeable taste and a rank smell. But that doesn't tell you anything very positively, for some people think linden honey has a disagreeable taste and a rank smell. If any one has a satisfactory description by which one unacquainted with it can readily recognize it, I shall be glad to have them help out.

It is possible to have a heavy yield of the stuff one year, and then not to see a drop of it for years again. Some places, however, seem to be visited with it every year.

Yes, it would be a good plan, where combs contain honey that is little better than poison to the bees, to extract and fill up with sugar. You can extract without disturbing the cells that are sealed. I don't know whether it might not be best to uncap and extract any that is sealed, if it comes from the same source.

## Southern Department.

CONDUCTED BY

DR. J. P. H. BROWN, AUGUSTA, GA.

[Please send all questions relating to bee-keeping in the South direct to Dr. Brown, and he will answer in this department.—Ed.]

### Mailing Drones for Fertilizing Purposes.

"I have a few virgin queens but no drones to fertilize them; can you mail me a few?" Thus writes a correspondent in New York State.

It is no hard matter to successfully mail drones, but I have never known of their being any benefit after their reception. The confinement in the cage, and the tumbling about in the mail-pouch, seem to impair their virile power.

### The Honey-Locust for Bees.

This, I think, stands at the head of the list of mellifluous trees cultivated for ornamental purposes. When in bloom, which lasts from one to two weeks, the bees swarm on it from early dawn until dark. They will work on this bloom to the neglect of all other forage. The honey is quite light—much lighter than basswood. The only objection to it as an ornamental shade-tree is its long spires.

### Cutting Out Queen-Cells to Prevent Swarming.

DR. BROWN:—Will you kindly give your views as to the feasibility of preventing swarms by cutting out queen-cells every six or seven days? I believe this method has some advocates, but will the bees work as well as if allowed to swarm? "EASTERN KENTUCKY."

Theory and practice do not always work harmoniously together, particularly when there are a number of collaterals bearing upon the "matter of fact" side of the question. This is particularly so when applied to the theory of cutting out queen-cells to prevent swarming.

To cut out the queen-cells is a very uncertain remedy to prevent swarming with the Cyprians, Palestines, and some other varieties of the honey-bee; and, in fact, it is not always reliable with Italians and blacks. When bees get the swarming-fever, they will often swarm in spite of the absence of cells.

Besides, when cutting out, a cell may be overlooked; and the labor involved, and the time consumed in performing this work in a large apiary, would amount to a large item of expense. Moreover, the constant disturbing and tinkering at a colony during the midst of the honey-flow interferes with the labor of the workers. This is a fact too well established.

Taking one season with another, the bulk of our surplus honey is gathered by the first or prime swarms. Hence, summing up the *pros* and the *cons*, it is best to allow one swarm to issue, and then, in five or six days, cut out all queen-cells but one, which should be the best. By this time the larvae will be too old to use for others, and the probabilities are that no more swarms will issue from that hive during the season; and if the honey-flow is protracted, the old colony may gather a fair lot of surplus.

### Peculiarities of Honey-Producing Flora.

Of the whole round of bee-keeping knowledge, that which embraces the honey-producing plants, seems to be the least understood. Conclusions here are generally drawn too hastily, and consequently erroneous information is frequently imparted.

Bees at times work on bloom that yields very little honey, and the fact of their presence does not prove that it is valuable for its secretion of nectar. One or two seasons of observations are not sufficient to determine the worth of a plant for honey. There are hundreds of acres of golden-rod, *Solidago*, within range of my bees, and for quite a number of seasons I was under the impression that the honey they were then storing was obtained from the golden-rod. The bees were working on it, but I finally found out that I was mistaken in my conclusions, and that the honey was gathered from a different source. A species of aster was in bloom at the same time; and, by the way, it blooms in my locality from the first of September until killed by the frost. In early morning not a bee could be seen upon it, but they could be seen upon the golden-rod at nearly all hours in the day. Toward noon they would commence working on the aster and keep it up until late in the evening. By Sept. 20 the golden-rod is pretty well out of bloom while the aster is at its height. But as the character and quality of the honey gathered continued to be the same, I found out that I had been giving the golden-rod credit for an article it did not produce. The golden-rod (*Solidago pubescens*) in my location is a poor honey-plant, while it may be good in other places.

The sourwood is considered by some bee-keepers as a most valuable forage. My bees have access to hundreds of these trees, and I have yet to see the first bee on the bloom. Now this is very strange when put by the side of what others say of it. I can only account for it by diversity of soil or atmospheric condition.

Buckwheat, north of the latitude of North Carolina, may be a good forage plant; but south, it is perfectly unreliable. It will only secrete an abundance of nectar when the atmosphere is cool and moist. This is a condition we cannot well have in the South. If sown, with us, in early spring, it comes in competition with forage that yields honey much more liberally than it does, and the bees go for the richest pasture. If sown so it will bloom in July and August, the time when we have a gap between the spring and fall flow, our hot suns dissipate all nectar if any should be secreted; and if sown so it will bloom in the fall it will come in competition with flowers that are better forage. Buckwheat will bloom here six weeks after sowing.

Our most reliable and best honey-sources are the poplar or tulip tree (*Liriodendron*), holly, black-gum, persimmon, and some others of minor consideration. The poplar never fails unless killed by frost, as it was last year. The honey is rather dark, but of most excellent flavor. Our main honey crop is gathered from the above sources, from the first of April until the middle of June. Before this, bees work on a great variety of forage, including fruit-bloom, commencing on the alder about the middle of January, which only yields pollen. This year my bees brought the first pollen in from the alder about Feb. 22, a full month later than usual.

The forage in semi-tropical Florida is entirely different from what it is in this latitude. The past cold, freezing winter has been very disastrous to the honey-sources there; so much so that for the time being the "tropical" part of the adjective would better have been erased and "frigid" substituted.

There is a very beautiful tree, *Sterculia plataniifolia* (sometimes called "varnish tree," from the smoothness of its bark), that blooms the latter part of June, and continues in bloom some two or three weeks. The bees work on this from daylight until dark; and while I do not think it yields a great deal of honey it affords some for breeding, and fills a portion of the gap between the spring and fall harvest. The tree is of Japan origin, large leaved, grows very rapidly, very ornamental, and makes an excellent shade. I do not think it would grow north of the latitude of Tennessee; when quite young it needs some winter protection. I have none for sale. I presume young, two or three year old trees could be obtained of first-class Southern nurseries.

During the past 30 years I have tried many experiments with cultivated bee-forage, and I am satisfied that it does not pay to cultivate plants exclusively for the amount of the nectar-secretion. There are many conditions influencing the secretion of honey that we do not understand, and as large and certain crops of honey are what the bee-keeper desires, he should give his best energies toward studying these influencing conditions.



## Canadian Beedom.

Conducted by "BEE-MASTER."

### How to Manage Bees in Canada.

It has been suggested that I write a series of articles on the above topic, but to do so in such a way as to cover the whole ground would be to write a treatise on bee-keeping, with a special adaptation to Canada. This is almost too big an undertaking for one department of a journal which has several departments, and to attempt it might seem like arrogating the office of instructor-general. For the management of bees in Canada is the same as in any other part of the world, except in so far as there are peculiarities of climate, forage and season to be accounted for. A few words on these three points will go far to answer the query at the head of this article. At the same time it must be borne in mind that after the most specific directions have been given about bee-management in a particular country, there is much for the bee-keeper to study in regard to his own special locality. What may be best for me in my field may not be equally good for somebody else whose apiary is 50 miles, less or more, distant from mine.

The first special features to be considered about Canadian beedom are the length and severity of the winter. These demand extra precaution, either in the way of outside cases with some kind of packing between them and the hive, or removal into a cellar or other repository on the approach of cold weather. Bees may be wintered safely in both ways, and each method has its advocates. In some parts of Canada the winters are steadily cold, and the mercury often descends a considerable distance below zero, and stays there for some time. In other sections the weather is more variable. There are days when the temperature is mild and even warm. Then, again, there is a cold dip, and perhaps, along with keen frost, a cutting wind. But there are both successful cellar-winterers and successful out-door-winterers in all these diversities of climatic condition. The cellar-winterers put their bees in winter quarters early in November, and endeavor to maintain an inside temperature of 40° to 45°. The cellar or other repository is regarded and treated as one big hive, and special care is taken to have a supply of pure air and ample ventilation.

For out-door wintering the requisites are a packing-box or case to set over the hive, large enough to admit of four to six inches of packing with dry sawdust, chaff or forest leaves. Ventilation is given at the bottom, and, as with in-door wintering, the provision must be ample. It is pretty clear that cold does not kill bees. The two evils to be guarded against are damp and insufficiency of stores. With plenty of air and abundance of food there is seldom any difficulty unless the colony is a weak one. With enough bees to keep one another warm, ample ventilation and plenty to eat, the winter problem is solved.

The next peculiarity of bee-management in Canada is connected with the forage. The honey harvest is in June and July. In order to succeed there must be a strong force of workers when the flow of nectar comes. There is a difference of opinion among bee-keepers as to the wisdom of spring feeding to build up an army of honey-gatherers. I do not favor it myself. The feeding should be done, if at all, not later than September. If the supply of food is abundant and the hive is kept good and warm, the bees will rear all the workers they can, without any puttering with spring feeding. They are wiser than human beings in regard to rearing a big family, which they will not do if they have not the means of supporting them. On the other hand, with an ample food supply, they will rear brood for all that they are worth. They seem to understand perfectly the importance of having all the young brood they can support, in order that the most may be made of the honey-harvest when it arrives.

A third feature in Canadian bee-management grows out of the fact that the season is short. In very few localities is there any fall honey harvest. Buckwheat is only grown in certain districts of the country. Where there is any quantity of it, the hives are well stocked with honey for winter, and sometimes a surplus is yielded. Beyond buckwheat, there is only a small assortment of nectar-yielding flowers that bloom in the fall of the year, enough to amuse the bees, and prolong the memories of the summer, but not sufficient to add appreciably to the winter supply of food. Consequently, particular care must be taken, not later than September, to see that colonies not amply supplied with a store of food for winter are

fed with sugar syrup. The remaining preparations for winter should be made in good time—certainly before a very cold snap occurs—for bees, once thoroughly chilled, do not appear to do so well as when they glide into cold weather gradually and comfortably.

### Items of News.

The following clippings are from the Canadian Bee Journal:

**INCREASED GRANT.**—Messrs. Holtermann and Pickett were appointed a committee to secure an increased grant of \$200 for the Ontario Bee-Keepers' Association. No increase was placed in the estimates, but the Hon. John Dryden, Minister of Agriculture, placed \$150 in the supplementary estimates, which passed the House. The Association would have liked the \$200 asked for, but when so many demands are made we should be thankful for the \$150. The Association will make good use of the money, and must exercise economy in every department.

**A PURCHASE.**—Some of the readers of the Canadian Bee Journal have been aware of the fact that C. A. Ouellette, Tilbury, Ont., has been publishing the Practical Bee-keeper. At first it was a quarterly, but for some time it has been published monthly. We have not expected Mr. Ouellette to work in the interest of the Canadian Bee Journal, and Mr. Ouellette has not expected us to work in the interest of the Practical Bee-keeper. Mr. Ouellette has also been a manufacturer of bee-keepers' supplies and we believe has had a very fair share of trade. Lately, Mr. Ouellette has seen an opening for a box factory and has made Gould, Shapley & Muir Co. (Ltd.) an offer, which has resulted in the purchase of the Practical Bee-keeper and the machinery, etc., for the manufacture of bee-keepers' supplies.

There is not room for more than one bee-journal in Canada; a substantial financial backing is required for even one journal. When it comes to the supply business, Mr. Ouellette is quite willing to admit there are too many in the business now, and he would advise any one to go slow before engaging in that line of manufacture. Mr. Ouellette is not the only manufacturer of bee-keepers' supplies who has within the past year offered to sell out.

**THE INDUSTRIAL PRIZE-LIST.**—The Toronto Industrial Exhibition apian prize-list has been increased about \$100, and other advantages have been secured. The prize-list has been changed to encourage less extensive exhibits, and we want a good many to make an extra effort to send extracted and comb honey, beeswax, etc., of the best quality.

**Ten Weeks for Ten Cents.**—This is a "trial trip" offer to those who are not now subscribers to the American Bee Journal. Undoubtedly there are thousands who would take this journal regularly if they only had a "good taste" of it, so as to know what a help it would be to them in their work with bees. In order that such bee-keepers may be able to get that "taste," the very low offer of "10 weeks for 10 cents" is made.

Now, dear reader, you cannot do a better service than to show this offer to your neighbor bee-keeping friends, and urge them to send on their 10 cents and get the next 10 numbers of the old American Bee Journal. In fact, you could afford to send the 10 cents for them, and then after the 10 weeks expire, get them as new subscribers for a year. They will be easy to secure then, for the 10 numbers will be a fair trial, and they will want the Bee Journal regularly if they are at all interested in bee-keeping.

Remember, it's only 10 cents for 10 weeks, to all not now subscribers to the Bee Journal.

**A B C of Bee-Culture.**—We have some of these books left, and in order to close them out quickly, we renew the low offers we made on them. This is the fine cyclopedia of bee-keeping by A. I. Root, containing 400 pages and nearly 200 engravings. The regular price is \$1.25, but we will send the American Bee Journal one year and the "A B C" bound in cloth—both for only \$1.80; or the parchment cover (very heavy paper) "A B C" and the American Bee Journal one year—both together only \$1.50.



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## Editorial Budget.

**The Cool Weather** just now (May 13) may be a good thing for the bees, if it doesn't get so cold as to chill the brood. The hot weather of a few days ago was bringing on the clover in this latitude so rapidly that the harvest would have been here without enough bees to take care of it. This weather will hold back the harvest, and it may give the bees more time to build up. Let us hope that all will be for the best.

**The North American Convention** this year has received a special grant of \$100 from the Ontario Legislature, to defray the expenses at Toronto. I learn this from the Farmer's Advocate for May 1, an excellent Canadian farm paper. Look out for some "big dol'n's" at the next convention of the North American. It's just like those Canucks to try to out-do their United States cousins. But I suppose we'll have to stand it, and take what they give us this year.

**New Bee-Writers** are constantly coming to the front. Dr. Miller noticed it in a "straw" in Gleanings, where he says: "How many bright bee-keepers are coming to the surface as writers." Editor Root then followed with this remark: "Yes, I've noticed that there were more lately. I am glad of it, because it infuses new blood into our literature."

I think the past year or two there have been more new writers found in our bee-literature than in the previous five years. And, what's more, nearly all of them are superior writers, too. They possess the "know-how," both of practical experience and in the manner of telling it. May their tribe increase!

**Secor Bros. & Co.** is the way the firm name will read hereafter instead of Secor Bros. The new partner is Mr. Willard Secor, the son of Hon. Eugene Secor, so well known to the readers of the American Bee Journal. "Willard" has been cashier of the Faribault County Bank at Winnebago City, Minn., for the past five years, and brings to his new position the reputation of an active, prosperous business man of the highest integrity. This new arrangement should give Mr. Eugene Secor more time to devote to care of the bees, and also to write about them. He has kept his apiarian electric-light hid too much under a bushel the past few years. Let us hope from now on he will let his light shine out oftener.

Ten weeks for ten cents. See page 331.

**Report of the North American.**—Ex-President Abbott, after waiting over six months for the completion of the Report of the last meeting of the North American Bee-Keepers' Association, writes me as follows concerning the delay caused by ex-Secretary Benton:

MY DEAR MR. YORK:—I have patiently watched and waited for the completion of the printed Report of the doings of the St. Joseph meeting until I have about made up my mind that it will never be finished.

I have written to Mr. Benton and urged him to give to the public this report which belongs, legally and morally, to the Association, and not to him as a private individual. As he not only fails to furnish the completed report, but treats my letters with silent contempt, I think the time has come when the readers of the American Bee Journal should know why this delay.

Mr. Benton, as all understand, accepted the position of Secretary, knowing fully the nature of his duties; and more, he accepted the \$25 which the Association voted him in payment for his services. Having done this, it seems to me he was morally and legally bound to complete the work in a reasonable length of time, or else give a plausible excuse for not doing so.

Mr. Benton occupies a public position, and is supposed to represent the apiarists of the United States in that position. If I do not very much mistake the temper of the intelligent bee-keepers of this country, they will not continue very long to recognize any one as their representative who so wilfully insults their intelligence by such actions. I know this is putting it strongly, but I am ready to stand behind all I say.

This is not a personal matter with me, but I confess I have been forced to make some rather humiliating explanations in regard to it. I promised copies of the printed Report to the Commercial Club of our city, and to some of our leading citizens, and the only reason I can possibly offer for not keeping my promise is that the Secretary has failed to furnish the copy to the printer.

Now, if Mr. Benton can offer any excuse for his course, I presume the columns of the American Bee Journal will be open to him, but as the case now appears to me, there is no excuse; as he has shown the utmost disregard for the feelings and interests of every one but himself.

EMERSON T. ABBOTT.

St. Joseph, Mo. Ex-Pres. N. A. B.-K. Association.

Mr. Benton still has in his possession about half of the Report. I have been ready all the time to proceed with it in these columns whenever I had all of the remainder of the copy in my hands.

**A Big Offer.**—Send two new subscribers to the American Bee Journal for one year, at \$1.00 each, and get as your premium a free copy of Root's "A B C of Bee-Culture" bound in cloth. This offer will hold good only so long as the present stock of books holds out; so you'd better send your order within a couple of weeks. It's a big offer, and you ought not to miss it.

**Terrible Bees of India.**—Mr. J. S. Scott, of Springville, Utah, sends the following, which is taken from the Youth's Companion:

**TERRIBLE BEES.**—Not far from Jabalpur, in the highlands of Central India, the Nerbudda river boils along, deep and sullen, for two miles, between sheer walls of pure white marble a hundred feet in height. Here and there the white limestone is seamed by veins of dark green volcanic rock, a contrast which enhances the purity of the surrounding marble. As the visitor to these marble rocks is poled up the gorge in a flat-bottomed punt, he gives himself to the admiration of the marvellous scene of beauty.

But there is "a fly in the amber." Numerous colonies of bees, whose combs are attached to jutting ledges of the rocks, are easily disturbed, and then come down in angry swarms on the offender. An English engineer, Mr. Bobbington, was in a boat with a companion sounding the river for a projected crossing of a railroad. Several of the party were on the plateau above, shooting at the blue-rock pigeons that build in the cliffs.

The shooting irritated the bees, and they attacked the two men in the boat below, and forced them to seek protection by taking to the water. The companion eluded the stinging



insects by diving under water, remaining there for a long time, and, at last, hiding in a cleft of the rock.

But Boddington, although also a practiced swimmer, was never lost sight of by the exasperated bees, and in the end was drowned, and his body carried down the stream. It was recovered, and buried above the cliff under a marble slab cut from the rock under which he had met his death.

Captain Forsyth, of the Bengal Staff, who tells the sad story, says that he has several times been attacked by this species of bees, the *Bonhra* (*Apis dorsata*), while riding through forest tracts.

Once his baggage animals were attacked and scattered in every direction. One pony, that could not get rid of his load, was killed on the spot, and many of the men and ponies were so severely stung as to be laid up for several days. In the Mutiny days a large force of troops, horse and foot, were routed by a swarm of these terrible insects.

Efforts have been made to domesticate *Apis dorsata*, but I think those who have tried it have failed in every instance. The late Prof. Cheshire calls it "a useless savage," and says it is in the nature of things impracticable to hybridize our hive-bees with it. Mr. Baldensperger, who claims to have had some experience with it, says it cannot be confined to a hive, and cannot be kept from migrating at certain seasons any more than can wild fowl. From nearly all I have read about it, it seems almost impossible to ever expect it to be of any practical value, even if it could be successfully introduced into this country.

#### Dr. Adolphus de Planta.

In the British Bee Journal for March 14, 1895, the following sketch, and portrait (given on the first page of this issue), were published, which it is a great pleasure to reproduce here:

Dr. de Planta was born on May 13, 1820, at Tamins, in the Canton Grisons, Switzerland. He was educated in the college at Schnepferthal, and it was here that he acquired a taste for natural sciences. He then attended the classes at the Industrial School at Zurich, and upon deciding to devote himself specially to chemistry, he went to study in the universities of Berlin, Heidelberg, and Giessen. In 1845 he completed his studies, and after passing a brilliant examination he obtained a degree of Doctor of Philosophy. Being fond of nature and study, he traveled through France to England, after which he visited Norway, Spain, Portugal, as well as Egypt and Palestine.

For 15 years Dr. de Planta worked assiduously in his own laboratory at Reichenau, and occupied himself principally with researches on the mineral springs of the Canton of Grisons. During his stay in Germany, whither he had repaired for the education of his children, he was urged by Dr. Liebig and his friend, Prof. Erlenmeyer, of Munich, to investigate the unsettled points in connection with bees and their products. To this he devoted ten consecutive winters, and on his return to Switzerland he continued his researches.

There is hardly another man who has given so much time to scientific investigations for the benefit of bee-keepers as Dr. de Planta. Being of independent means, and with characteristic zeal and energy, this amiable and benevolent man was able to devote considerable time for the advancement of the pursuit in which he took so great an interest. Although we knew Dr. de Planta by his works previous to 1883, it was in that year that we had the pleasure of making his personal acquaintance, and have from that time carried on a constant correspondence. In 1883, whilst at Zurich, we had the opportunity of seeing some of the results of our friend's work, and it was to settle some of the points undecided up to that time that Dr. de Planta undertook the work. The results of seven years' labor were represented in two small cases in the exhibition. He had been experimenting for seven years with a view to determining the constituents of honey, as he found this different to the nectar in the flowers; and he also wanted to determine what part pollen played in the production of honey or wax. A bottle contained pollen which had been got from hazel blossoms, and 13 other bottles contained the different constituents of which this pollen was composed.

Dr. de Planta explained to us the difficulty he had had in getting a sufficient quantity of pollen for experiments, and it was such as would have certainly deterred any person with less perseverance from prosecuting the experiments. The same difficulty was experienced in getting sufficient nectar,

which had to be collected by means of a pipette, and sealed up at once to prevent the action of bacteria. The constituents showed no coagulated albumen, but this was afterwards found in honey. He also found that whereas nectar contained cane-sugar, honey contained none, or simply a trace, which could not enter into calculation. To determine what caused the difference, he tried to find out what part the glands played in the transformation.

The way in which he carried out his experiments in this line is very interesting. He pounded a large number of heads of bees in a mortar, and dissolved out the saliva with glycerine, from which he was afterwards able to separate and analyze it. He found that by means of the saliva various substances in the nectar were converted into other substances which only appeared in the honey. This way he was able to prove that honey undergoes a change in passing through a bee, and that the saliva plays a very important part in producing this change. This determined, Dr. Planta tried to find out what prevented honey from fermenting or decomposing. This he found was formic acid, which is known to be a powerful preservative or antiseptic.

Bee-bread was next experimented upon, and was found to contain pollen, honey, and saliva. Experiments on wax showed that it contained cerotic acid, myricene, and saliva; so that it is evident that saliva plays a very important part in the products of the hive, which was quite unknown before that time. Another important work was to test the various substances on which bees could be fed with advantage for the purpose of producing wax. Bees were fed on honey alone, sugar and honey, sugar and yolk of egg, sugar alone, sugar-dextrine and rose-water, gelatine and sugar. The combs produced from these substances were of various colors, those from sugar being the whitest, next came the produce of gelatine and sugar, third honey and sugar; fourth honey alone; and those produced from other substances were quite brown.

He has further experimented on the methods of distinguishing between pure and adulterated honey. One of the grandest and most important works was that of determining the nature of the food of the larvae and royal jelly, and thus confirming the view taken by Schonfeld that brood food was semi-digested, and produced in the chyle stomach. In opposition to this Schiemenz, who followed Leuckart, stated that "The food is not produced in the chyle stomach, but is a secretion from the glands," and this view, without anything to corroborate it, was adopted by Cheshire. The subject is too long to go into now, but it will suffice to say that Dr. de Planta's chemical experiments were quite sufficient to set this theory completely at rest, and to show not only that Schonfeld was correct, but that the anatomical structure of the bee was specially adapted for the particular way of feeding with chyle, and that the food given to the different larvae differed in quantity and quality, according to their development. It would take too much space to go into the full details here.

Dr. de Planta occupied himself with other chemical studies, more particularly with respect to the esculent properties of various vegetables. The amount of work done in connection with bees may be judged from the following papers and memoirs published from time to time:

"Chemical Studies of Bees" (in conjunction with Dr. Erlenmeyer), 1878 to 1886; "Economy of the Hive;" "Pollens, Bee-Bread, and the Ferments Which they Contain;" "Methods of Distinguishing Between Pure and Adulterated Honey;" "Cappings of Brood-Cells;" "The Presence of Formic Acid in Honey;" "The Collection of Pollen by Bees;" "What Causes the Color of Wax;" "Detritus Collected in Hive;" "Chemical Composition of Hazel Pollen;" "Experiments in Artificial Feeding of Bees;" "Analysis of Barricades Constructed by Bees;" "Chemical Composition of Some of the Nectars;" "Composition of Brood Food;" "Fruit Sugar as Food for Bees;" "The Formation of Honey and the Elimination by the Bees of Water from Nectar," etc. These are some of the works for which bee-keepers are indebted to Dr. de Planta. He was busy at his favorite subject even up to the last, for only a few weeks ago we had a letter from him in which he told us that he was occupied on the pollen (bee-bread) in cells. Here is an extract from his letter:

"I am occupied with a big work on bee-bread (*Bienenbrod*). I have made partly myself, and have had done by an assistant, the analysis of combs, honey, cane-sugar, pollen, and bee-bread. As a result, the proof will be furnished that the opinion of Gerstung with regard to the degeneration of colonies of bees, on being fed on sugar, without pollen, is perfectly correct. What is self-evident, and is found by practical experience, will be confirmed and decided by figures derived from analysis."

For some time Dr. de Planta was President of the Swiss

Bee-Keepers' Association, and entered heartily into the work of that society. Last year he was elected honorary member of the British Bee-Keepers' Association, in consideration of the services he had rendered in the advancement of the science of apiculture. We have only briefly alluded to some of Dr. de Planta's work, but it is sufficient to show the great loss sustained by bee-keepers, and, in company with our Swiss brethren, we mourn his loss, and extend to his widow and children our heartfelt sympathy.

**Bee-Keepers of the South** are invited to patronize the "Southern Department" of the American Bee Journal. Send on your questions and bits of experience to Dr. Brown, who will answer and offer suggestions that will help you. You will be the loser if you don't take advantage of Dr. Brown's large bee-experience and willingness to aid you in keeping your bees profitably.

## Among the Bee-Papers

Conducted by "GLENER."

### THE SWARMING HABIT.

"I have noted that I have had less swarming in my apiary during the past eight years, through which time I have reared nearly all my queens over queen-excluders, than I formerly had; yet I would not think it best to put forth the idea that a continuation of rearing queens thus for a quarter of a century or longer would give a race of non-swarming bees."—Doolittle, in *Gleanings*.

### OLD HIVES FOR SWARMS.

I confess to feeling not a little puzzled over what Dr. Hachenberg says on page 287, about using old hives. Surely he cannot mean that a hive that has been used must be thrown away as soon as it becomes unoccupied. He has lost about 50 swarms in trying all sorts of experiments to try to get swarms to accept old hives. In view of the fact that other bee-keepers have successfully used old hives all these years by the hundred, is it not just possible that his experiments always did something with the old hives that made them distasteful to the bees? Has he ever tried old hives without any salt or anything but the hives? I have used old hives many and many a time, and so have others, and this case of the Doctor's is something quite new.

### A DISAGREEMENT—WHICH IS RIGHT?

There is a disagreement between Canadian Bee Journal and Canadian Beedom, and the question is whether "Journal" or "dom" is nearest the mark. On page 302 Bee-Master says, "In Germany, where there are more bees and bee-keepers to the square mile than in any other part of the world." Canadian Bee Journal, page 507 of the May number, gives a table of the number of colonies per square mile of 11 countries, in which Germany has 9 colonies per square mile, Austria 13.37, Belgium 17.49, and Holland 18; the last being twice as many as Germany. In marked contrast with these, Ontario has about three-fourths of a colony to every square mile, and Canada .06, or one colony for every 16 square miles. Editor Holtermann offers this table as strong evidence against the view of Editor Hutchinson that as a country becomes settled and civilization advances, bee-keeping is likely to become less profitable. It does look a little like a knock-down argument.

### BEE-MASTER AND DR. WATTS' ERRORS.

On page 302 Bee-Master points out "two great errors" in the well-known couplet of Dr. Watts—"How doth the little busy bee," etc. One is that Dr. Watts says the bees "gather honey;" and the other is that he says they gather "from every opening flower." But one shouldn't be too hard on poor Dr. Watts, when one sees the same errors repeated in the present day by those who are supposed to be up-to-date in bee-matters. Witness the writings of Bee-Master himself, who, on the very same page on which he makes the positive declaration that "the bee does not gather honey," says "honey-gathering" instead of "nectar-gathering," "honeyless" instead of "nectarless," and "honey is offered" instead of "nectar is offered." And then, after calling attention to the fact that instead of the bees gathering "from every opening flower," only some flowers yield nectar, in the very next sentence he

falls himself into precisely the same kind of error by saying that bees gather from every flower which they visit, when it should be only some; for any one who has watched bees at work in New York state may have noticed them many a time fumbling over a flower from which they get no nectar, instead of being "invariably rewarded by a tiny drop."

### EDITOR E. B. ROOT'S "PATENT" VIEWS.

Whatever may have been the opinions of my respected parent in the past, the more I look into the patent system in the United States the more I feel like admiring it. Although it has its defects, the system in our country, I believe the world acknowledges, is the most perfect in the world. And the fact that some of the greatest and most useful inventions have emanated from this land is evidence along this line.... On the other hand, I believe that our patent system should be so modified as to restrict some of the fearful abuses connected with some of these patent-monopolies. I am glad to see that the Supreme Court has recently made some much-needed and substantial limitations.—*Gleanings*.

## Notes AND Comments.

CONDUCTED BY

Rev. Emerson T. Abbott, St. Joseph, Mo.

**Inoculation Against Stings.**—"Mr. Herbert Smith writes us that in his experience particular parts of the body may become temporarily inoculated against insect stings."—*Insect Life*, published by the Department of Agriculture.

This is in line with my own experience, and I suppose many observant bee-keepers have noticed that after they have been working at the bees for some time and have been stung several times on the hand that a thrust at that point causes very little, if any, pain. Mr. Smith says that in picking specimens of wasps from his net, "The fore-finger of the left hand was stung so often that it lost all susceptibility even to severe stings, and it remained so for two or three years."

Prof. Riley, as quoted in another article in the same publication, says, in speaking of scorpions: "The effect of the sting upon a person diminishes in virulence with repetition, and may become innocuous." He further says, "They are dangerous in proportion to the state of irritation they may be in." Is it not possible that here may be found the reason why a sting from a bee is sometimes so very painful, and even fatal? I know we generally say it is the condition of the blood of the person who is stung, or the location of the wound, but is it not possible that the more excited the bee becomes the more virulent the secretion of the poison-sac? If this theory be correct, it will explain why it is that a number of stings frequently have no injurious effect, while at another time a single sting may prove fatal.

In the line of remedies for the sting of the scorpion, Mr. Smith says: "My wife was stung by a small one in the West Indies; the wound was on the end of the forefinger and was exceedingly painful. By the advice of a servant, she held the finger for an hour in hot sweet-oil mixed with an equal measure of laudanum. There was no swelling, and three hours after all pain had left her. This remedy is a popular one in the West Indies and the result seems to show that it is good."

It may prove equally valuable as a treatment for a bee-sting, and is worthy of a trial in severe cases.

Here is another explanation as to the cause of some persons being peculiarly affected by the sting of a poisonous insect. At first it would seem to contradict the first theory, but the truth of the matter would seem to be that a person in good health is better prepared to resist the ravages of the poison of any kind of an insect. This being true, dissipated fellows would better keep away from bees. Here is what Dr. Aaron has to say on the subject, as quoted from the article mentioned above:

"I am convinced that no healthy adult need have serious alarm from the bite or sting of one of these creatures, although, as I have more than once found out to my cost, their poisons are the cause of much and excruciating pain. Leprosy, yaws, the malignant forms of syphilis, are all very common among negroes, mestizos and half-breeds in the American tropics, and it is among such subjects that the poisonous insects and minor poisonous reptiles find their victims of serious poisoning and death. But a man in good health, with pure blood and of good habits, will, in every case (in my opinion), throw off their effects in from one to five days."





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## General Items.

### Will be a Golden Year.

Bees are booming here. We have had 80 inches of rain—17 is the average. It is going to be a golden year in Southern California.  
**A. J. COOK.**

Claremont, Calif., May 8.

### Nuclei from the South.

Where the main honey-flow does not begin until about July 1, as it does here, it will pay to import one-frame nuclei from the South. The willow, box-elder and dandelions are just beginning to blossom here now, and there is something for the bees to work on until the white clover comes, which is about June 20, and lucerne about July 1; from then we have a steady honey-flow until frost—about Sept. 15. In 1893 I got 10 one-frame nuclei in the spring, that averaged 38 sections each that season.

I have lost, the past winter, 23 colonies out of 73 that I had last fall, but what are left are in extra good condition.

Heber, Utah, May 1. **J. A. SMITH.**

### Extracting with Heat—Hive-Covers.

Here is something new from an Ohio bee-keeper: He extracts all his honey by melting it, comb and all, in the oven of the kitchen stove. He then allows it to cool, which, of course, brings the wax to the top in the shape of a crust; and then by simply cutting a hole in the crust he can lay as fine a lot of extracted (or "evaporated") honey before his guests as you ever met with! Leastwise that's what he says. The wax is, of course, salable; and he cuts out only the part of comb that is filled with honey; leaving it for the bees to fill out again at their pleasure.

This is certainly a new idea—melting in an oven—and who dare gainsay it isn't a worthy new thing! It is less trouble and bother than extracting by machinery; and if, as a noted bee-doctor says, it can be made a reliable method, it is a good thing.

We are all pretty well aware, I presume, that honey will not stand too much cooking; in fact, heat is very liable to spoil both flavor and "keeping qualities." Honey is extremely delicate in this respect, and it would seem as though one must keep a pretty close eye upon the temperature of the oven in order to make much of a success of it. What do the American Bee Journal readers think about it, "anyhow?"

Query—What improvement can you suggest that will make our hive-covers waterproof, lasting, and non-crackable?  
Denver, Colo. **WM. M. BARNUM.**

### Handling Bees, Etc.

The reason why I prefer to handle my bees myself, is that I think I can do it better to suit me than any one else can, especially those that are not used to the business. I have handled thousands of colonies, having been in the business to some extent almost all my lifetime so far. (I am about 68 years old.) Besides, I sort my hives, if I may so express it, as I put them into the cellar. The medium heavy hives are put by themselves, also the light, and the very heavy ones by themselves. Then I know just where to find the light colonies in case I have to feed them while yet in the cellar; and in that case I can draw from the heavy colonies, and supply the weaker ones; and for other purposes—perhaps some honey to sell, and for various purposes. I feed no liquid sweet to bees in the cellar.

I commenced putting out my bees April 5, it being the first day suitable for bees to fly since some time last December, here in this section (although bees that were out, would come out the hives before, and would die quite a good deal, too). On the 5th, from about 2 p.m. I carried out 58 colonies. All the hives had bees in them, and were

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mostly strong in numbers. On the morning of April 7 I carried out 50 colonies, it being all I put into the cellar except one, which was queenless last fall. I suppose my cellar was too damp and cold, as the hives and combs were somewhat moldy, and a few colonies were slightly affected with dysentery. All weak colonies, and those that are not right otherwise, if they are worth saving, I unite with other colonies.

H. F. NEWTON.  
Whitney's Crossing, N. Y., April 23.

#### Bees and Strawberries Again.

I have just read the last article in the Bee Journal on strawberries and bees. I have about  $\frac{1}{4}$  of an acre in those berries, and 22 colonies of bees. As there has not been a day since the strawberries commenced to bloom that the bees did not work most or all the day, I feel sure I should know the facts, in this locality; and more especially so this year, as I planted a new bed of the choicest varieties this spring, and have cared for them with the greatest of care; and yet (yes, I will say it) I have not seen one honey-bee on a single strawberry. I have seen a variety of fleas, and other insects, but no bees.

Does that prove they don't work on strawberries? To my mind, not at all; but it does prove that they can find other honey and pollen producing plants that are more to their liking than strawberries.

For the last 10 days we have had apricot, pear, crab, plum, cherry, apple, and all the forest trees in full bloom, and that is the reason they could not fly low enough to see the strawberries.

Our kind Heavenly Father has so provided things that the work of fertilization is not left to one class of insects, so when bees fail it is done all the same.

Cooksville, Ill., May 6. E. B. ELLIS.

#### Wintered Finely, Etc.

Bees wintered finely in the cellar, and they came out strong. I put my bees in Nov. 12, and put them out the summer stands Feb. 25. They had a good flight, and a few days later they worked on the soft maple, which helped wonderfully in brood-rearing. This is promising to be a fine year for bees so far. Now they are working on gooseberry blossom, which is a good honey-producer. Next is apple-bloom, which makes them hum the more. My bees are partly working in the sections, some colonies having 24 sections two-thirds full from apple blossoms.

I say bees are a benefit to fruit and berry blossoms of all kinds. I would not be without bees to grow berries and fruit of any kind. I grow berries of all kinds, and also fruit in a small way, and keep bees for pleasure.

GEORGE F. YOOS.  
Central City, Ill., April 29.

#### Wintered Well in North Dakota.

On Nov. 19, 1894, we put into the cellar 20 colonies of bees, all in fine condition, and on April 6 and 7 we took them all out alive, and all in good condition except one colony. That one is very weak in bees, but has a fine large queen and plenty of honey. We would have put them into the cellar earlier, but delayed in hopes that we would have a warm day so the bees would have a good flight, but it continued cloudy and rather cold. The morning of Nov. 18 the mercury stood at 5 degrees below zero, and the morning of the 19th (the day they were put into the cellar) at zero. They did not have a good flight after Oct. 15. They were out a little on Oct. 23 and 24, and on Nov. 5.

I think the fact of their wintering so well was owing to being so well supplied with honey and bees. They were in one part of the cellar under the dwelling-house, which is divided from the other part by a board partition. The only ventilation they had was from the inside cellar door and through the chimney, which is built from the bottom of the cellar up, with a hole for a stove-pipe in the cellar. I had a stove in the cel-

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21A W. C. Frazier, Atlantic, Iowa.  
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lar, and for nearly two weeks before putting the bees in a fire was kindled in the stove every day to dry and ventilate the cellar, and a little fire occasionally through the coldest part of the winter. The temperature of the cellar was generally only a little above the freezing point.

Our bees are now, and for several days have been, carrying in pollen from the willows at a good rate. Whether bees get honey from the willows here or not I cannot tell, but I know they can get any amount of pollen. I know nothing about botany, and do not know what to call these willows. They grow mostly about streams, but will probably grow in any wet ground. They reach a height of 15 to 20 feet, and sometimes four to five inches through at the butt. The wood, except the sap wood, is about the color of wild cherry or Washington cedar, and is very lasty, and makes excellent firewood. Can some one tell us what it is called? and whether or not it produces nectar?

Up to this date the spring has been unusually mild.

H. P. WILLSON.  
Bathgate, N. Dak., April 24.

#### A Report for 1894.

In the last number I read the same old tune—"clover is good." What clover? Clover is poorer than for six years past—it is frozen out, with the exception of sweet clover on the roadside. I would like to find how far from here white clover is raised for seed. It was good to poor last year—from 8 bushels to 45 pounds of seed per acre. While last year there were 200 acres within reach of my bees, this year only 6 acres. See the difference? The price was \$9.50 to \$8 per bushel. I had, in six weeks' time, two barrels of white clover honey—little enough for 50 colonies. So you can see if the atmosphere is not just right, it will not do anything. From 11 days' basswood I had nearly four times as much. I do not produce comb honey.

I learned to cure foul brood since I wrote last, and the three colonies cured are doing finely, having 4 and 5 combs of brood. One is on the same combs, in the same hive, and same frames as a year ago.

JOHN H. GUENTHER.  
Theresa, Wis., May 1.

#### The Ozark Mountain Region.

We are in the Ozark Mountains, about 600 or 700 feet above St. Louis, Mo., and 115 miles south. I have only been here two years, and I think this is one of the best honey-producing countries I have ever seen. First, we have the witch hazel, that begins to bloom about Jan. 15, and blooms until March; then the soft maple, hard maple, and numerous other trees including the linden.

I brought four colonies of Italian bees from Arkansas last year, and lost two of my queens, so I had but two colonies left, and I gave them the two queenless colonies, and that made them very strong when the honey season came. They gave me 325 pounds of comb honey, and I increased to four colonies. I have had but one swarm in five years, that is, a natural swarm. I find artificial swarming the most profitable.

I use the Langstroth 10-frame hive, and find it to be small enough here, while the 8-frame was large enough in Arkansas.

I sow sweet clover for my bees, also Alsike clover and buckwheat about July 12 or 15; the buckwheat sown at that time blooms until frost.

J. R. GIBSON.  
Redford, Mo., May 3.

#### Something About New Mexico.

I have received the following letter from R. S. Becktell, of Bellaire, Mich., dated March 4, 1895:

I am in the north part of Michigan, near Traverse City. I have 90 colonies of bees. What is the lowest price of bees there in good hives? or do you know of any for sale cheap in box-hives near you, or south, near Pecos, Tex.? How cold is it there in win-



ter? How much snow and rain in winter and summer? Does the weather get too hot in summer? Is it above 90 degrees much of the time? What honey-plants have you besides alfalfa? Is alfalfa very plentiful? Does fruit pay well? Is there much danger of frost killing it in the spring? What is the price of land, etc.?

R. S. BECKTELL.

The advantages here, I suppose, are a healthy and good climate, if one would call it such. We have had no rain since last August that would wet a man with his coat on. We had two snows about 4 inches each. Our rainy season is in July and August of every year. Bees do well here—a sure honey-flow every year, and for about six months straight along. Mesquite is just beginning to bloom, and lasts about two months. Alfalfa will bloom first in May, about the 15th to the 20th. It will be cut every 40 days, if it is handled rightly. They cut it four times, and when in full bloom. I have a world of catclaw for my bees. I have moved from Eddy to Florence, five miles from a railroad station. This is all of the first-class honey-plants that are worth speaking about. This is a new country, and there is not much fruit here yet. There is one orchard within 3 miles of me, 6 years old—about 10 acres, 5 in grapes. The oldest part of the valley is at Roswell. Land is selling from \$30 to \$50 per acre, raw, that is, under the ditches, with a water right.

Lowest price for bees is \$5 per colony, with no super on the hive, which has 8 frames. There are no bees in box-hives that I know of. The elevation here is 3,200 feet above sea level. The warmest days it is 112 degrees in the shade. The air is dry, the wind blows, and it doesn't seem to be warm. The coldest is down to 4 degrees below zero—but not over six nights all last winter, the coldest winter we have had for sometime. These are some of the advantages.

I now will try and tell some of the disadvantages. This is a prairie country—not a natural tree in 50 miles of here; so dry and sandy that a man cannot eat, from Feb. 15 to May 15, without eating sand in everything he eats. It is warm here, not hot or not cold. Sometimes it blows all day so you can't see 500 feet for a day at a time. Your hives will blow so full of sand that you will have to pour the sand out the next day so the bees can get out. On the 5th of this month we had one of those sandstorms, and I could not see my hives all day long. The next morning there was ice all over the ditches, and the fruit was in full bloom, and did not kill it, on account of no moisture in the air.

On page 240, J. W. S., of Dayton, Ky., wants to know if we have any sudden changes. Not cold ones, and no hot waves.

E. SCOGGIN.

Florence, New Mex., April 2.

#### Wintering Bees in the Cellar.

Last November I placed six colonies in the cellar, in Langstroth hives. I had a room built very snug and tight, using matched boards, and flooring over the bottom. Size of room, 12x14. There is a steam-boiler in the cellar used for heating the house, within four feet of the room, so that the thermometer did not vary from 58 degrees all winter, but I had an opening six inches square through the cellar window, which allowed a cold air draft all the time, giving plenty of ventilation.

I first placed a super on a bottom-board on the floor of the room, then placed a hive on that, allowing the whole space in the super for ventilation, the opening of course being the same as if the hive was out-of-doors. I then took off the cover, and put on a piece of old cotton cloth, then put on another super to hold the cloth in place—any other arrangement would do as well. In this way I left them no cover on, just the cloth above the bees, and the room dark.

April 20 I took them out, and placed them on the summer stands. They came out in splendid condition. I could not see that they moved all winter. They did not come

out at all, and there was not a cup full of dead bees left in all the bottoms after the hives were removed.

Now in all the accounts I have read, it was stated that from 40 to 45 degrees was the proper temperature, but nothing could be better than the way my bees came out, and apparently they consumed very little of their stores, as the hives were very heavy; indeed, I could not see but they were as heavy as when put into the cellar.

O. E. DOUGLASS.

Lewiston, Maine, April 22.

#### Bee-Keeping in Central Missouri.

Bees are a great deal scarcer here than they were a few years ago, but those left are being managed in a way that better results are being realized. The box-hives and log-gums of long ago have almost disappeared with the "king bee" and other superstitious notions. In their stead we have modern hives, smokers, honey-extractors, Italian queens, bee books and papers.

The prospect for a honey crop, at this writing, is very good. Bees have built up very fast since about March 25, the best colonies overflowing with young bees. The weather has been dry and warm. Bees began work on apricot bloom about April 1; also on willow, elm and maple, in the order named, and now they are just roaring on plum, peach, pear, cherry, apple, gooseberry and currants. As I write, I can see the bees are busy, going to and coming from the hundreds of trees that now are clothed in robes of spotless white.

I had 16 colonies last year, which gave me a surplus of from 24 to 62 one-pound sections per colony, and from present indications they will do better this year.

The American Bee Journal comes to me regularly, and is one of my most valued friends. I read it carefully, editorials, correspondence, advertisements and all.

JOHN W. BEATTY.

Excelsior Springs, Mo., April 20.

#### Heavy Loss in the Cellar.

I put 65 colonies into my cellar, last fall, in good condition. About two weeks after I put them in, they commenced getting uneasy, and all but two colonies left their hives, and fell on the floor. I have two colonies left.

MARK D. JUDKINS.

Osakis, Minn., May 10.

#### A Correction—Heavy Fruit-Bloom.

I wish to correct an error in my article on hive-construction, on page 206. The length of end-bar as there given was 11 1/4 inches. It should read 11 inches. Before I had read Mr. Chas. Dadant's article describing the Dadant-Blatt hive, and recommending a modification of it so as to use lumber 12 inches in width for the brood-chamber, I had made several brood-chambers of that depth, and had decided to make mine all of that depth hereafter, for the reason that he mentions, viz.: the ease of getting lumber of the right width. W. C. Frazier objects to these deeper frames on account of the greater liability of the combs to melt and break down in hot weather. I have not learned that the users of the Quinby frames, which are deeper still, have any trouble on that account.

Fruit-bloom was very abundant here the first days of May, and the weather warm and pleasant, with an abundance of moisture. My bees came through the winter in perfect condition, and colonies are all strong. I put supers on some of the strongest to discourage swarming, but in spite of the precaution I had a swarm issue the morning of the 6th. The weather has turned cold, and I reckon that I shall have to feed that swarm.

EDWIN BEVINS.

Leon, Iowa, May 11.

**Bee-Keeping for Profit**, by Dr. G. L. Tinker.—Revised and enlarged. It details the author's "new system, or how to get the largest yields of comb or extracted honey." 80 p.; illustrated. 25c.

#### Honey & Beeswax Market Quotations.

CHICAGO, ILL., Apr. 18.—The supply of comb honey is very light and looks as though all would be sold, unless it be some California that is being spread upon the street. Best white comb brings 14c.; dark, 8@10c. Extracted, 5 1/2@7c., according to quality, body, flavor and package.

Beeswax, 28@30c.

R. A. B. & Co.

KANSAS CITY, Mo., May 8.—The demand for comb honey is light. We quote: No. 1 white 1-lbs., 15@14c.; No. 2, 12@13c.; No. 1 amber, 11@12c.; No. 2, 10c. Extracted, 5 1/2@7c. Beeswax, 25c.

C. C. C. & Co.

CINCINNATI, O., May 14.—Demand is quiet for comb honey at 12@16c. for best white, and quiet for extracted at 4@7c.

Beeswax is in good demand at 25@31c. for good to choice yellow.

C. F. M. & S.

CHICAGO, ILL., Mar. 18.—Demand is good for all grades of honey excepting dark comb. We quote: Fancy comb, 15c.; No. 1, 14c. Extracted, 5@6 1/2c.

J. A. L.

PHILADELPHIA, PA., May 18.—Comb honey is in poor demand. Large stores are now waiting for the new crop. Extracted is in fair demand. Beeswax has declined some, but good sales keep market from being overstocked. We quote: Comb honey, 9c. Extracted, 4 1/2@6c. Beeswax, 29@30c. W. A. S.

NEW YORK, N. Y., May 6.—The market for comb honey is over. We cleaned out all of our stock of white but have some buckwheat yet on hand. Market on extracted is quiet, with sufficient supply to meet the demand. We quote: White comb, 11@12c.; dark, 8@9c. Extracted, white, 5 1/2@6c.; Southern, 50@55c. per gallon. Beeswax firm and in good demand at 32@33c.

H. B. & S.

#### Convention Notices.

ONTARIO.—The midsummer meeting of the Russell County Bee-Keepers' Association will be held on May 29, 1895, at the apiary of A. Edwards, Rockland, Ont. All interested in the production of honey are cordially invited to attend.

W. J. BROWN, Sec.

Chard, Ont.

KANSAS.—There will be a meeting of the Southeastern Kansas Bee-Keepers' Association, to be held in the city of Ft. Scott, on Thursday, June 6, 1895. Everybody is invited and all bee-keepers are urged to come.

Bronson, Kans.

J. C. BALCH, Sec.

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120 & 122 West Broadway.  
CHAS. ISRAEL & BROS., 110 Hudson St.  
I. J. STRINGHAM, 105 Park Place.

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## Doctor's Hints

By **DR. PEIRO, Chicago, Ill.**  
100 State Street.

### Don't be "Round-Shouldered."

So many people are "round-shouldered." This is a deformity resulting from careless habits. By contracting the lungs it often leads to serious results. Boys and girls should be early taught to avoid this danger. The following is the most effective and easy way: The youngster should be taught to walk straight, and always to hold the little fingers to the side-seams of his trousers, the palm of the hand outward. In this manner the chest is thrown forward and the shoulders back. This is a radical preventive and cure if persisted in.

### Sun-Bathing the Baby.

Teething babies are invariably benefited by prolonged sun-baths given every day. The little one should be held, naked, at the sunniest window in the house. Don't be afraid to tan or sunburn it. Much good it does. It will express its pleasure by sundry crows, and wiggling of toes, and sleeping soundly when in his crib.

### Heartlessness.

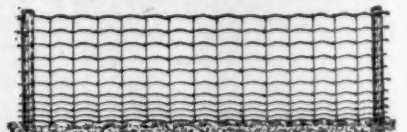
I quite agree with you, dear Lucy—only cowards enjoy the suffering of any of God's creatures. The boy who is mean enough to throw the stone that broke your doggie's leg would not hesitate to kill birds or stick pins into some smaller, helpless boy. Shame on such heartlessness!

### Eat and Don't Worry.

"Appendicitis?" Refers to a difficulty of a small portion of the bowel—as likely to become inflamed and dangerous as that lightning will hit you. Keep right on eating everything as usual, and don't worry.

### Apples—Nature's Remedy.

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## Question-Box.

In the multitude of counsellors there is safety.—Prov. 11-14.

### Double vs. Single Brood-Chamber, and Shape vs. Size.

Query 972.—1. Will just as much brood be produced in a given time in a brood-chamber consisting of two apartments, one over the other, as in a single brood-chamber of the same depth?

2. What influence has the shape of the brood-chamber, as distinguished from its size, on the amount of brood produced in spring?—Hive-Buyer.

J. M. Hambaugh—1. I think not. 2. I don't know.

Prof. A. J. Cook—1. I think so. 2. Not much, if any.

Mrs. L. Harrison—1. I don't know. 2. I never experimented on that line.

Chas. Dadant & Son—1. No. 2. The nearer square it is the more convenient it is for the queen.

Eugene Secor—1. I think so. I am using both, and observe no difference. 2. Practically, very little, I think.

W. G. Larrabee—1. I have never used a brood-chamber with two apartments. 2. I don't believe I can answer that.

B. Taylor—1. I do not know. I have thought so, but I am not certain. 2. I believe a square hive has the advantage.

P. H. Elwood—1. No. 2. More brood will be reared in a brood-chamber that allows the cluster to assume its natural shape.

Dr. J. P. H. Brown—1. I think the advantage would be on the side of a single brood-chamber. 2. It has very little, if any.

C. H. Dillbern—1. I do not see what could make any difference. 2. I do not think that the shape of the hive has much to do with it.

H. D. Cutting—1. I would prefer a single brood-chamber. 2. The locality and method adopted has more to do with it than the size of hive.

Rev. Emerson T. Abbott—1. I do not know. I want only one apartment to my brood-chambers. 2. None whatever. Plenty of bees and honey are what make brood.

E. France—1. Yes. 2. An 8-frame size Langstroth brood-chamber, two stories, is good. The same amount of room spread out two inches deep would be a poor arrangement.

Jas. A. Stone—1. No. 2. In the spring it often occurs that all the warmth is needed to encourage the queen in laying, and if you divide the space, you divide the heat, which would mostly be in the top.

G. M. Doolittle—1. My experience says no. 2. Bees best economize heat for brood-rearing where they can cluster in the form of a sphere, and the hive that allows them to thus cluster in early spring will give the most brood.

Rev. M. Mahin—1. Something depends upon the connection between the two apartments. If they are closely connected I do not see that any less brood would be produced. 2. Very little, provided the chamber is not very shallow.

R. L. Taylor—1. Two apartments would not work well. If you mean a horizontally divisible brood-chamber I would say yes. 2. Very little, I think, within the limits of the difference in shape among the hives used to any extent.

J. E. Pond—1. I think the single brood-chamber would produce more brood than a split hive. 2. This is a mooted question, and one on which there are many opinions. My preference is for the regular Simplicity-Langstroth hive, for many reasons.

Dr. C. C. Miller—1. I don't know. I shouldn't expect much difference. 2. Size will have something to do with it. If so small that the bees are crowded, it makes little difference about shape. If abundance of room, then the shape that comes nearest a natural cluster.

Wm. M. Barnum—I have always found a single Langstroth brood-chamber amply sufficient for all purposes. The plan mentioned will be found unprofitable. A single brood-chamber is enough and to spare, if the outside combs are judiciously worked over into the center as occasion requires.

Allen Pringle—1. That would depend upon circumstances. In a good honey-flow and high temperature there might be just as much produced, while in the reverse conditions I think the less would be produced. 2. That shape which tends more to the conservation of the heat and the convenience of the queen and workers. Therefore, the compact or concentric shape is best.

G. W. Demaree—1. In the early spring the double brood-chamber is at its worst, for rapid gain in brood-rearing; but later, when the weather becomes uniformly warm, there is not much difference. Aside from this, there is too much fuss attached to the double brood-chamber to be practicable. 2. A beginner will soon discover that he wants a hive for other purposes as well as for rearing brood.

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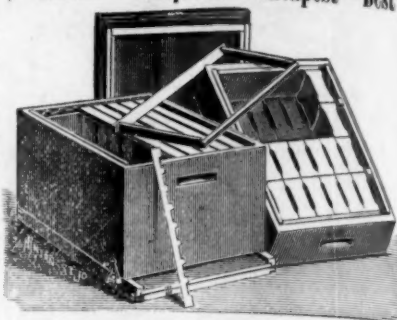
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